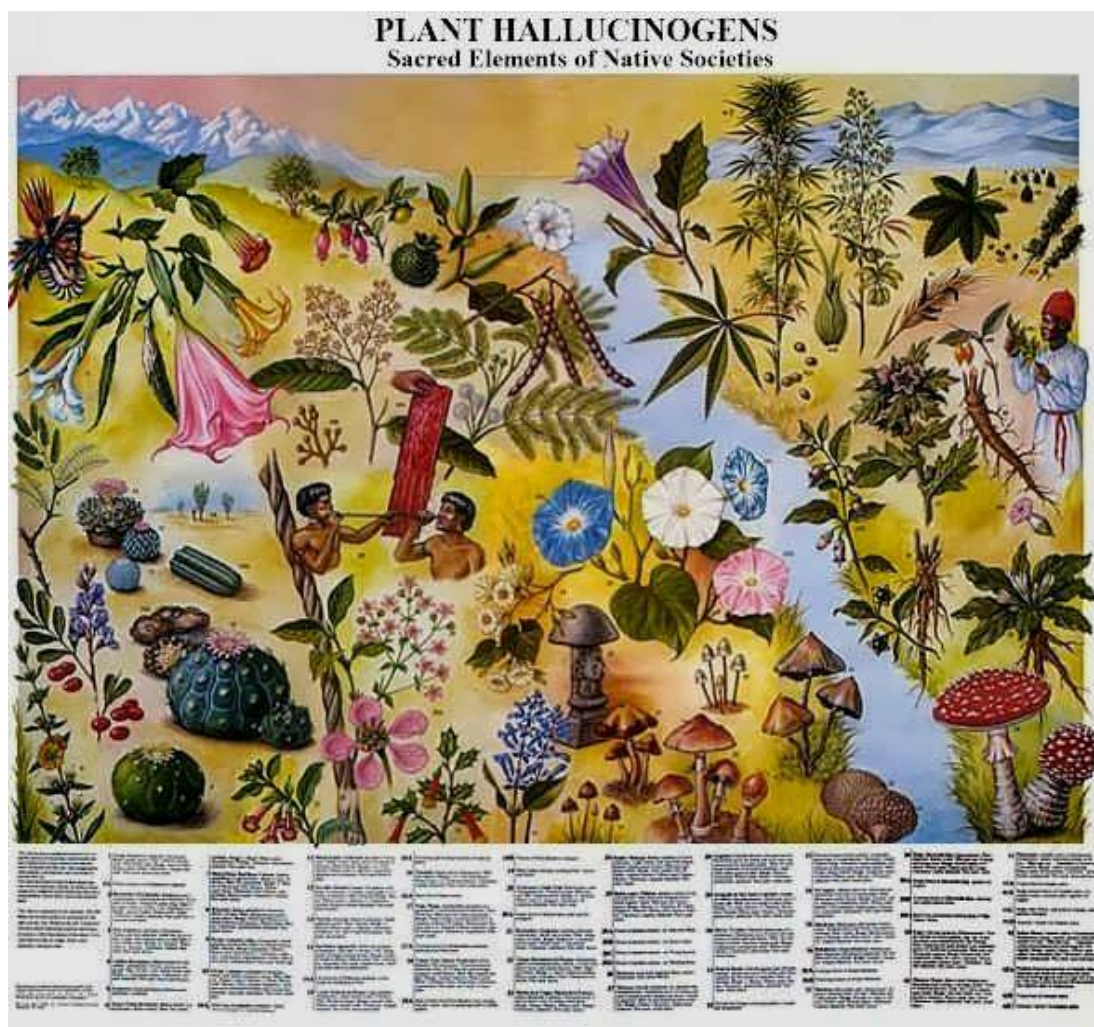


Plant Hallucinogens

Sacred Elements of Native Societies*

Researched and Compiled by Richard Evans Schultes, Illustrated by Elmer W. Smith
(Woodmere, New York, 1980)

* This material is presented solely for non-commercial educational/research purposes.



Elmer Smith's wonderful illustrations are identified by the renowned botanist Richard Schultes in text entries under the drawings. Because the chart is quite large, we have divided it into its individual drawings below. The numbers correspond to the numbers appearing on the chart, and the texts are Schultes' explanatory texts. The chart has been amplified with links to Google Images and Wikipedia where available.

The first few text entries are informational:

This chart has been compiled and rendered with the specific intention of presenting a visual scientific display of plants (and in some instances the ritual elements connected with their use), often categorized as hallucinogenic or psychoactive and is not meant to promote their use.

The abuse and misuse of some of these plants especially the more poisonous varieties, by modern society outside their indigenous sacred context has often led to social problems, serious illness, and in some instances death.

The chart is composed of two sections: The Old World uses of these plants are portrayed on the right and the New World on the left. A legend is included below indicating common and botanical names; a brief description of the plant; if it is cultivated or wild; its range; where used; chemistry; and parts used.

The numbering begins on the upper left of the chart.



1. Tonga. *Brugmansia sanguinea* (Solanaceae) and 1A. Flower and leaves of *Brugmansia sanguinea*. Bushy treelet up to 12 feet. Flowers tubular. Cult. Near house sites. Range: most of Andes. Where used: Andes. Chemistry: tropane alkaloids. Part used: leaves and seeds.



2. Borrachero, Floripondio. *Brugmansia aurea* (Solanaceae). Flowering branch depicted. Small tree, 9-10 feet. Flowers 8 inches long, fragrant at night, white or yellow. Cult. Inhabited sites. Range: most of Andes. Where used: Andes. Chemistry: tropane alkaloids. Part used: leaves, branches and seeds.

3. [Toá. *Brugmansia suaveolens* \(Solanaceae\)](#). Flower and fruit depicted. Small tree up to 10 feet. Large, bell-shaped white or pink flowers. Cult. House sites. Range: w. Amazon. Where used: w. Amazon. Chemistry: tropane alkaloids. Part used: leaves.

4. [Culebra Borrachero. *Methysticodendron amesianum* \(Solanaceae\)](#). Flower and leaves depicted. Tree, 25 feet. Cult. Indian house sites. Range: s. Colombian Andes. Chemistry: tropane alkaloids. Part used: leaves and flowers.

5. *Brugmansia*-drinking Kamsá medicine-man, Sibundoy, Colombia.

Wikipedia entries: [Brugmansia](#), [Solanaceae](#).



6. [Ajuca, Vinho de Jurema. *Mimosa hostilis* \(Leguminosae\)](#). Bushy treelet. Wild. Dry, sandy *caatingas*. Range: e. Brazil. Where used: Pernambuco, Paraiba. Chemistry: dimethyltryptamine. Part used: root.

Wikipedia entry: [Mimosa tenuiflora/hostilis](#).



7. [Mescal Bean, Red Bean, Colorin. *Sophora secundiflora* \(Leguminosae\)](#). Shrub or tree, 25-40 feet. Wild. Dry grasslands. Range: n. Mexico to Texas and New Mexico. Where used: Texas, Oklahoma, New Mexico, and probably Mexico (past). Chemistry: cytisine. Part used: beans.

Wikipedia entries: [Calia/Sophora secundiflora](#), [Leguminosae/Fabaceae](#).



8. Sinicuichi. *Heimia salicifolia* (*Lythraceae*). Shrub, 2-6 feet. Wild. Along streams and in moist places. Range: Texas and Mexico to n. South America and Jamaica. Where used: Mexico. Chemistry: quinolizidine alkaloids. Part used: leaves.

Wikipedia entries: [Heimia](#), [Lythraceae](#).



9. Peyote. *Lophophora diffusa* (*Cactaceae*). Small, spineless cactus with yellow or whitish flowers. Wild. Deserts. Range: Querétaro, Mexico. Where used: Querétaro (?). Chemistry: pellotine, anhalamine, lophophorine; (traces only of mescaline, anhalonidine). Part used: dried tops.

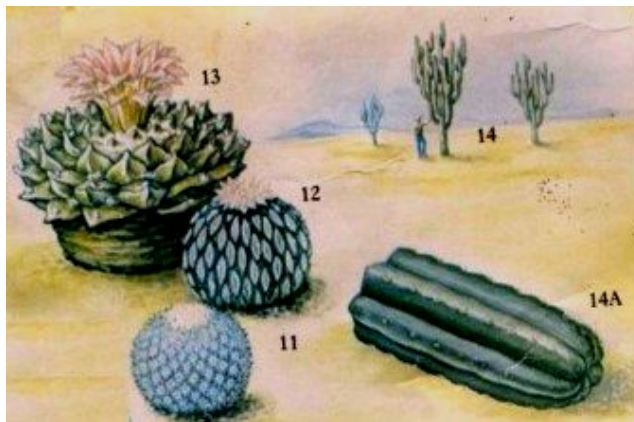
Wikipedia entry: [Lophophora](#) genus.



10. Peyote. *Lophophora williamsii* (Cactaceae); and

10A. Dried tops of *Lophophora williamsii* called "mescal buttons" or "peyote buttons." Small, gray-green, spineless cactus. Wild. Deserts. Range: c. and n. Mexico, s. Texas. Where used: Mexico, USA, Canada, Chemistry: more than thirty phenylethylamine and isoquinoline alkaloids, especially mescaline. Part used: dried tops.

Wikipedia entry: [Peyote/*Lophophora williamsii*](#).



11. Hikuli mulato. *Epithelantha micromeris* (Cactaceae). Small, round, spiny cactus 2 1/2 inches in diameter. Wild. Deserts. Range: s. w. USA, Mexico. Where used: n. Mexico. Chemistry: alkaloids and triterpenes. Part used: flesh of plant. Wikipedia entry: [Epithelantha micromeris](#).

12. Peyotillo, Hatchet Cactus. *Pelecypora aselliformis* (Cactaceae). Cylindric-conic plant 1 to 3 inches in diameter. Wild. Deserts. Range: Mexico. Where used: n. Mexico (?). Chemistry: recently found to contain alkaloids. Part used: flesh of plant.

13. Tsuwiri. *Ariocarpus retusus* (Cactaceae). Small, spineless cactus. Wild. Deserts. Range: n. Mexico. Where used: n. Mexico. Chemistry: hordenine, etc. and N-Methyltyramine. Part used: top of plant. Wikipedia entry: [Ariocarpus retusus](#).

14. San Pedro, Aguacolla. *Trichocereus pachanoi* (Cactaceae). Tree-like, 9-20 feet. Cult. Along roads, as hedges around houses. Range: Andes, Ecuador to Bolivia. Where used: Peru. Chemistry: mescaline. Part used: crushed stems, often with other plants as admixtures; and 14A. Cut stem-tip of *Trichocereus pachanoi*, as harvested for marketing in Peru. Wikipedia entry: [San Pedro Cactus](#).

Wikipedia entry: [Cactus \(Cactaceae\)](#).



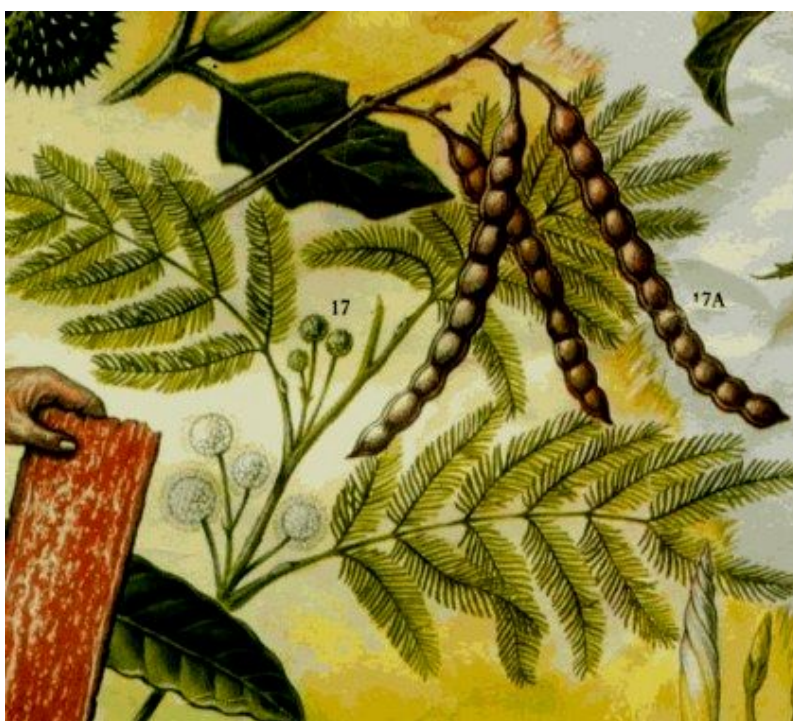
15. [Latué, Arbol de los Brujos. *Latua pubiflora* \(Solanaceae\)](#); and 15A. Flowering and fruiting branches of *Latua pubiflora*. Spiny shrub or tree, 9-30 feet. Wild. Mountain slopes. Range: central Chile. Where used: central Chile. Chemistry: tropane alkaloids. Part used: leaves and fruits.

Wikipedia entries: [Latua pubiflora \(Solanaceae\)](#), [Solanaceae](#).



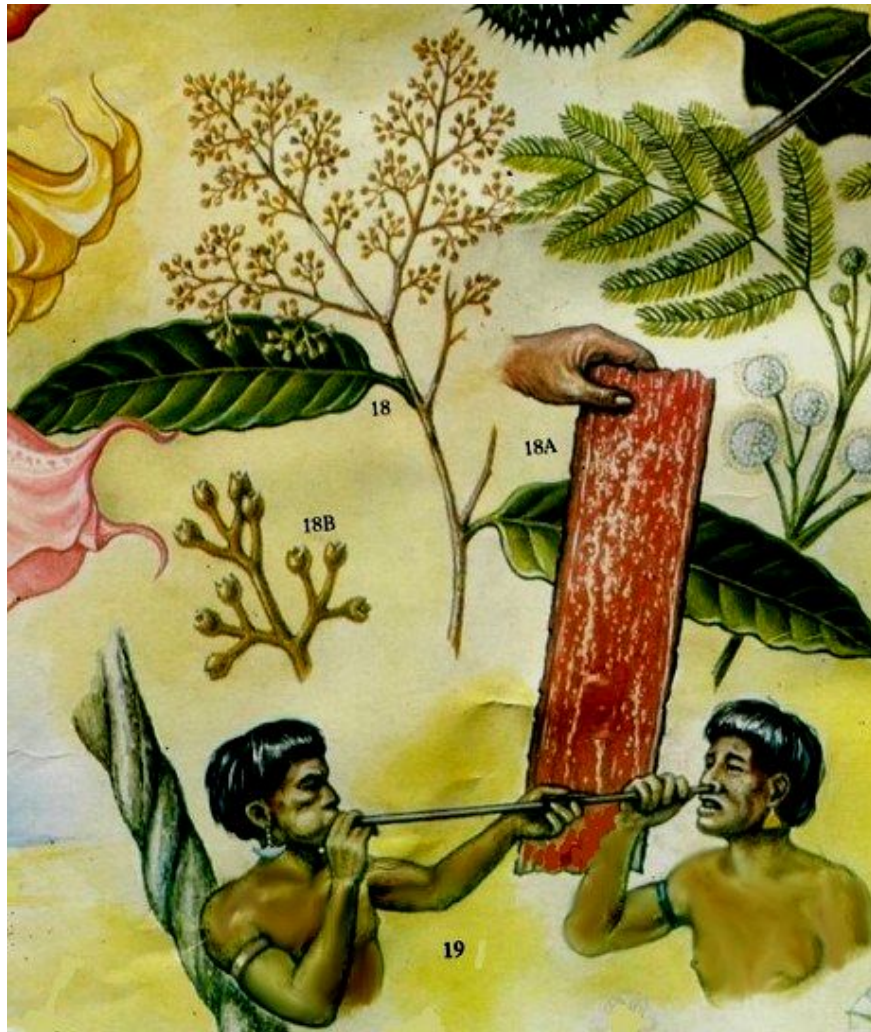
16. [Toloache. *Datura innoxia* \(Solanaceae\)](#); and 16A. Spiny fruit of *Datura innoxia*. Wild. Dry regions. Range: s. w. USA and Mexico. Where used: s. w. USA and Mexico. Chemistry: tropane alkaloids. Parts used: whole plant.

Wikipedia entries: [Datura innoxia \(Solanaceae\)](#), [Datura](#).



17. [Yopo, Niopo. *Anadenanthera peregrina* \(Leguminosae\)](#); and 17A. Fruiting branch of *Anadenanthera peregrina*, showing seed-filled pods. Flowering branch depicted. Tree, 30-50 feet. Wild and cult. Open grasslands. Range: Orinoco basin, scattered area of n. w. Amazon of Brazil, W. Indies. Where used: Orinoco and n. w. Amazon of Brazil (present), and W. Indies (past). Chemistry: tryptamines. Part used: seeds.

Wikipedia entries: [Anadenanthera peregrina \(Leguminosae\)](#), [Leguminosae/Fabaceae](#).



[18. Yakee, Yato, Epena, Nyakwana. *Virola theiodora* \(Myristicaceae\).](#) Flowering branch depicted. Tree, 25-75 feet tall with strongly pungent, small flowers. Wild. Wet tropical jungles. Range: tropical America. Where used: Brazil, Colombia, Peru, Venezuela. Chemistry: tryptamines. Part used: red "resin" of inner bark.

18A. Strip of bark from *Virola theiodora* tree, oozing the red "resin" used in preparing snuff or edible pellets.

18B. Flowers of *Virola theiodora*, enlarged.

19. Waika Indian shamans snuffing *Virola*. Amazonian Brazil.

Wikipedia entries: [Virola](#), [Myristicaceae](#).



20. [Ayahuasca, Caapi, Yajé. *Banisteriopsis caapi* \(Malpighiaceae\)](#); and 20A. Single flower of *Banisteriopsis caapi* (greatly enlarged). Extensive liana. Wild and cult. Wet, tropical forests. Range: w. Amazon. Where used: w. Amazon. Chemistry: B-carboline alkaloids. Part used: bark.

Wikipedia entry: [Banisteriopsis caapi](#).



21. [Borrachero, Panguano. *Iochroma fuchsioides* \(Solanaceae\)](#). Shrub, up to 6 feet. Wild. Along roads, in fields. Range: Andes of s. Colombia and Ecuador. Where used: s. Colombian Andes. Chemistry: unknown. Part used: leaves.

Wikipedia entry: [Iochroma fuchsioides](#).



22. Taique, Borrachero de Páramo. *Desfontainia spinosa* (*Desfontainiaceae*). Shrub, 1-6 feet with glossy leaves and tubular flowers. Wild. High mountains. Range: C. and S. America (Andes). Where used: Colombia, Chile. Chemistry: unknown. Part used: leaves.

Wikipedia entry: [Desfontainia spinosa](#).



23. Hierba de la Virgén, Hierba de la Pastora. *Salvia divinorum* (*Labiatae*). Perennial herb, 3 feet or more. Cult. In hidden forest plots. Range: Oaxaca, Mexico. Where used: Oaxaca. Chemistry: unknown. Part used: leaves.

Wikipedia entry: [Salvia divinorum](#).



24. Badoh, Ololiuqui. *Turbina corymbosa* (Convolvulaceae). Large woody vine with bell-shaped flowers. Seeds round, brown. Wild and cult. Sunny fields. Range: Gulf coastal USA, W. Indies, tropical America. Where used: Oaxaca, Mexico. Chemistry: ergoline alkaloids. Part used: seeds.

Wikipedia entry: [Turbina corymbosa](#).



25. Badoh negro, Tlilitzin. *Ipomoea violacea* (Convolvulaceae). Vine with heart-shaped leaves. Seeds angular, black. Wild and cult. Sunny places. Range: Mexico, C. America, W. Indies, tropical S. America. Where used: Oaxaca, Mexico. Chemistry: ergoline alkaloids. Parts used: seeds.

25A. Flower of *Ipomoea violacea*, var. Heavenly Blue.

25B. Flower of *Ipomoea violacea*, var. Pearly Gates.

25C. Flower of *Ipomoea violacea*, var. Flying Saucers.

25D. Flower of *Ipomoea violacea*, var. Wedding Bells.



[26. Mushroom stone](#) from highland Maya culture, Guatemala. Date about 900 B.C.

[27. Nti-si-so. *Psilocybe caerulescens* var. *mazatecorum* \(Strophariaceae\)](#). Mushroom up to 3 1/2 inches tall with a conspicuously nipped cap about 2 inches in diameter. Wild. In decomposing plant material. Range: Oaxaca. Chemistry: psilocybine, psilocine. Part used: whole plant.

[28. Angelitos. *Psilocybe mexicana* \(Strophariaceae\)](#). Mushroom up to 3 1/2 inches tall with conic cap surmounted by rounded nipple. Wild. In moss along roadsides or in humid meadows, especially under pines or oaks. Range: Mexico, Guatemala. Where used: Oaxaca. Chemistry: psilocybine, psilocine. Part used: whole plant.

[29. Honguillo de San Isidro Labrador. *Stropharia cubensis* \(Strophariaceae\)](#). Mushroom up to 3 inches tall. Wild. On cow dung in open fields. Range: s. e. Asia, Mexico, C. America. W. Indies, Florida. Where used: Oaxaca. Chemistry: psilocybine, psilocine. Part used: whole plant.

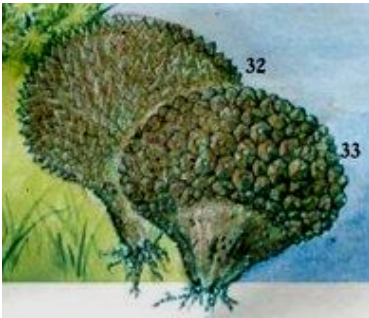
[30. She-to, To-shka. *Panaeolus sphinctrinus* \(Copriniaceae\)](#). Mushroom up to 5 inches tall with brown to black gills and spores. Wild. On cow dung in forests, pastures, along roads. Range: widespread in temperate zone. Where used: Oaxaca. Chemistry: psilocybine. Part used: whole plant.



31. Piule de Barda. *Psilocybe zapotecorum* (Strophariaceae). Mushroom up to 7 1/4 inches tall with a nipped cap 4 1/4 inches in diameter. Wild. In swamps. Range: s. Mexico. Where used: Oaxaca. Chemistry: psilocybine, psilocine. Part used: whole plant.

Wikipedia entries:

[Strophariaceae](#),
[Psilocybin mushrooms](#),
[Psilocybe cubensis](#),
[Panaeolus](#).

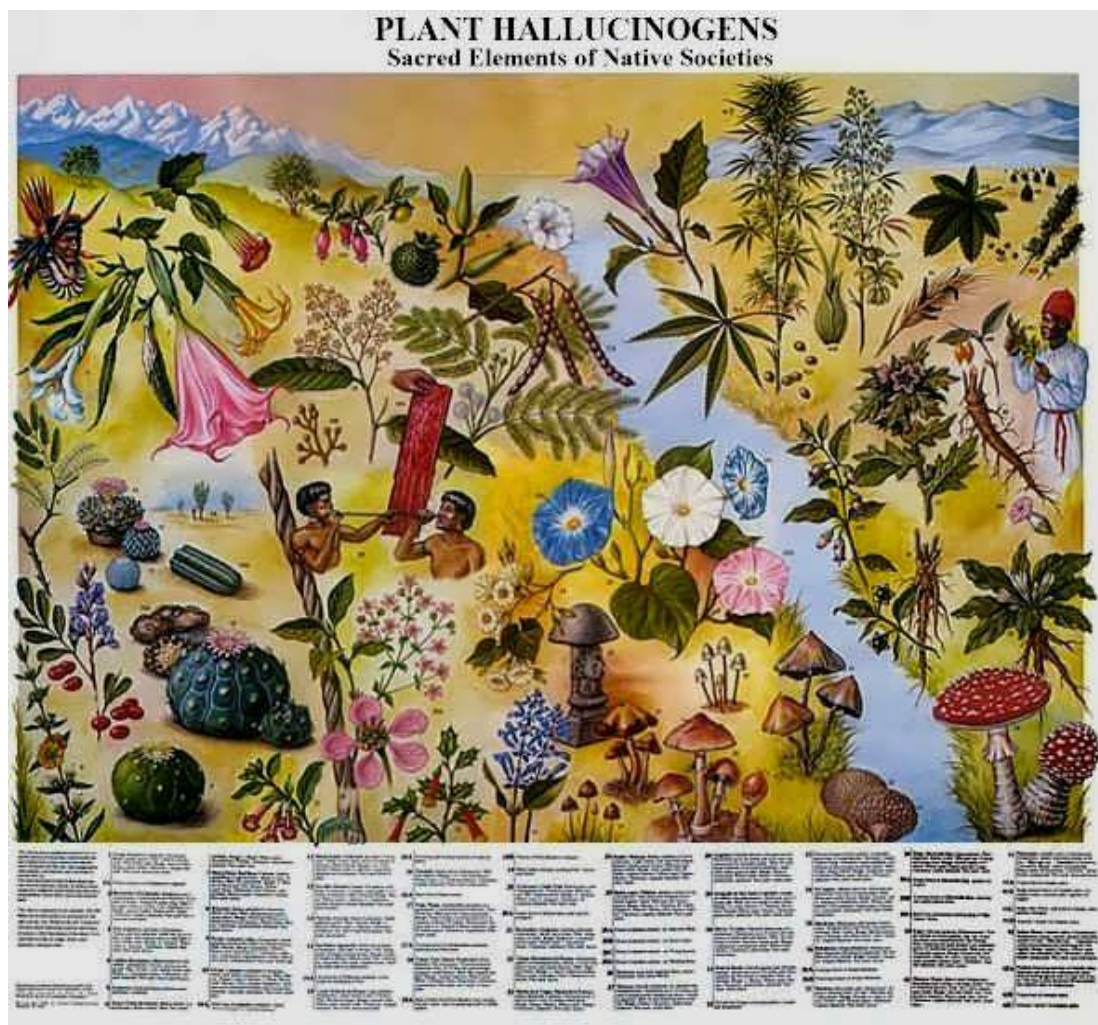


32. Gi-i-sa-wa (fungus of second quality). *Lycoperdon marginatum*.

33. Gi-i-wa (fungus of first quality). *Lycoperdon mixtecorum* (Lycoperdaceae). Rounded, roughly cobbled fungi, commonly called puffballs, with millions of microscopic brownish spores. Wild. fields, mossy forests. Range: temperate zones of Mexico. Where used: Mexico. Chemistry: unknown. Part used: whole plant.

Wikipedia entry: [Lycoperdaceae](#).

The numbering for Old World entheogens begins on the lower right of the chart.



34. Fly Agaric. *Amanita muscaria* (*Amanitaceae*). Mushroom with cap 5-8 inches diam. Wild. Birch and conifer forests. Range: Eurasia and N. America in temperate zones. Where used: Siberia, USA (present), India (past). Chemistry: muscimole, muscazone. Part used: dried mushroom.

Wikipedia entry: [Amanita muscaria](https://en.wikipedia.org/wiki/Amanita_muscaria).



35. Mandrake. *Mandragora officinarum* (*Solanaceae*). Stemless herb with fleshy root often bifurcated. Wild. Fields. Range: Mediterranean area of Europe, and Africa and w. Asia. Chemistry: tropane alkaloids. Part used: roots.

Wikipedia entries: [Mandragora officinarum](#), [Mandrake plant](#).



36. Belladonna. *Atropa belladonna* (Solanaceae). Stemless herb with fleshy root often bifurcated. Wild. Fields. Range: Mediterranean area of Europe, and Africa and w. Asia. Chemistry: tropane alkaloids. Part used: roots.

36A. Fruiting branch of *Atropa belladonna*.

36B. Flowering branch of *Atropa belladonna*.

Wikipedia entry: [Atropa belladonna](#).



37. Henbane. *Hyoscyamus niger* (Solanaceae). Annual or biennial herb, 3 1/2 feet. Wild and cult. Light forests. Range: Europe, w. Asia, n. Africa. Where used: Europe (past). Chemistry: tropane alkaloids. Part used: leaves.

Wikipedia entry: [Hyoscyamus niger/Henbane](#).



[38. Iboga. *Tabernanthe iboga* \(Apocynaceae\).](#) Root depicted. Shrub, 6 feet. Wild and cult. Forests and house sites. Range: humid tropics of w. Africa. Where used: Gabon and the Congo. Chemistry: indole alkaloids. Part used: roots.

38A. Single flower of *Tabernanthe iboga*, (greatly enlarged).

38B. Fruiting branch of *Tabernanthe iboga*, showing the usually paired fruits.

38C. Bwiti Cult practitioner holding sprig of *Iboga*. Gabon, Africa.

Wikipedia entry: [Tabernanthe iboga](#).



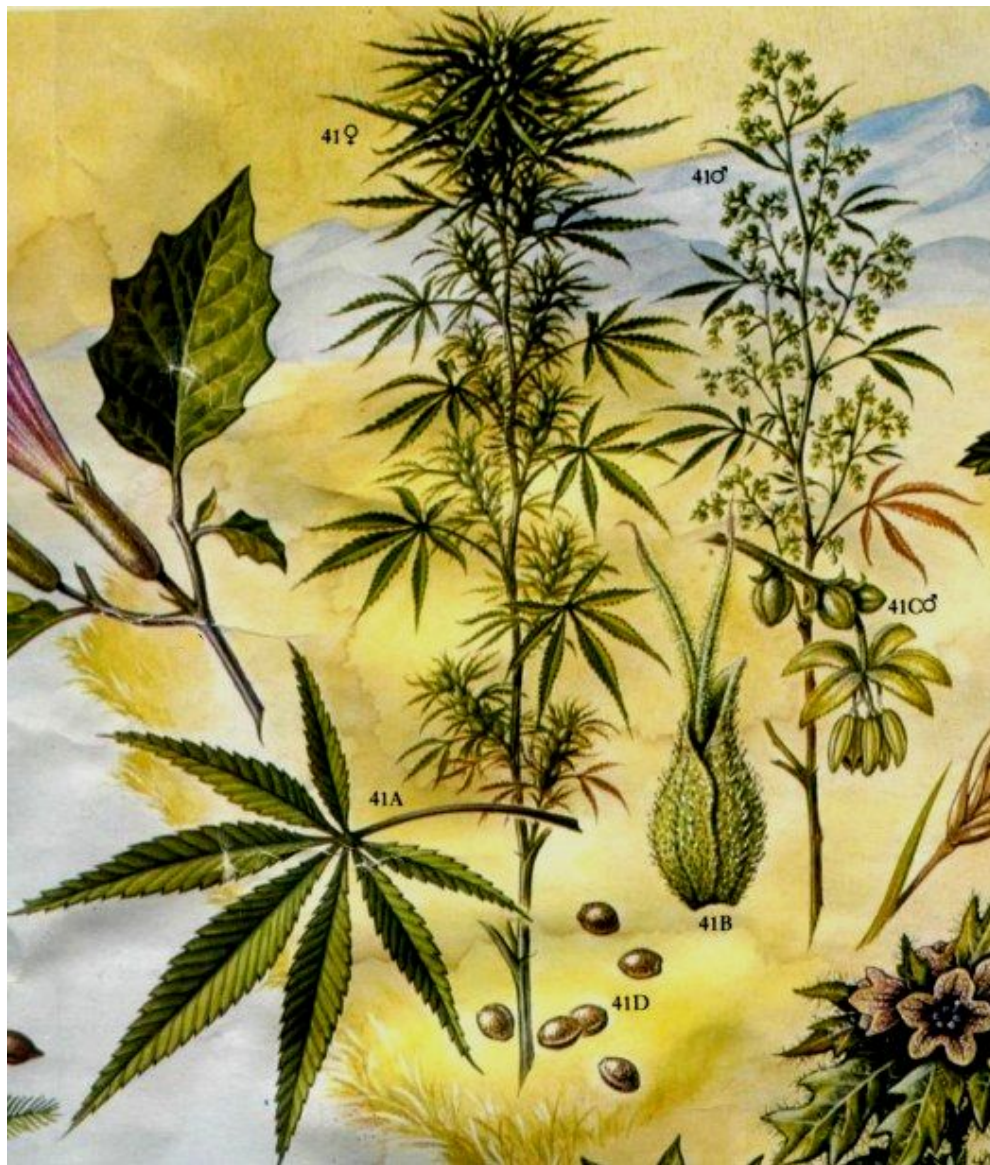
[39. Ergot. *Claviceps purpurea* \(Hypocreaceae\).](#) Fungal disease of certain grasses, esp. rye. A purple-black club-shaped growth, the fruiting body, replacing the grass kernel; is an important source of medicinal compounds. Wild and cult. Temperate regions. Range: Eurasia and less commonly Africa, N. and S. America. Where used: possibly Greece (past). Chemistry: ergoline alkaloids. Part used: tissue.

Wikipedia entries: [Claviceps purpurea](#), [Ergot](#).



40. Dhatura, Dutra. *Datura metel* (Solanaceae). Spreading herb 3-6 feet with large purple, white or yellowish flowers. Wild. Dry, warm regions, open fields. Range: Asia and Africa, now introduced to America. Where used: Asia, Africa. Chemistry: tropane alkaloids. Part used: whole plant.

Wikipedia entries: [Datura metel](#), [Datura](#).



[41. Marijuana. *Cannabis sativa* \(Cannabaceae\).](#) Herbaceous, loosely branched annual, 6-18 feet. Wild and cult. Adaptable to varied environments. Range: nearly cosmopolitan. Where used: all continents. Chemistry: cannabinolic compounds. Part used: resin and leaves.

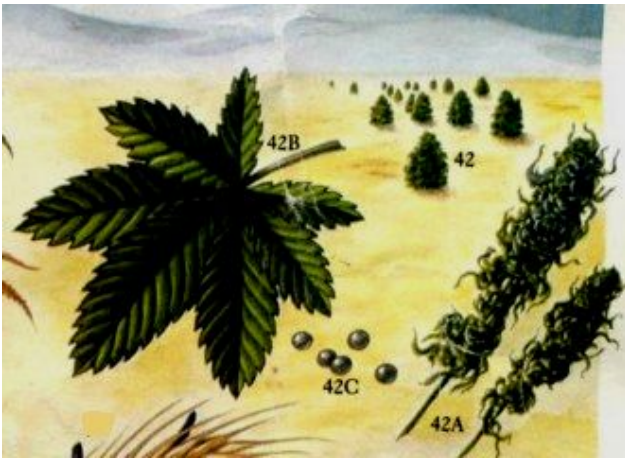
41A. Typical leaf of *Cannabis sativa*.

41B. Single female flower of *Cannabis sativa*, enclosed in hairy, resinous bract, (greatly enlarged).

41C. Single male flower, and buds of *Cannabis sativa*, (greatly enlarged).

41D. Achenes ("seeds") of *Cannabis sativa*.

Wikipedia entry: [Cannabis sativa](#).



[42. Indian Hemp. *Cannabis indica* \(Cannabaceae\).](#) Herbaceous annual, conical, densely branched, usually 4-6 feet. Wild and cult. Adaptable to varied environments but preferring dry, hot regions. Range: mainly Asiatic. Where used: widely, but primarily in Asia. Chemistry: cannabinolic compounds. Part used: resin and leaves.

42A. Pistillate flowering branches of *Cannabis indica* squeezed and dried for collecting the dusty resin by hitting against side of a pan full of water. The dust is then skimmed off and pressed into hashish cakes in Afghanistan.

42B. Typical leaf of *Cannabis indica*.

42C. Achenes ("seeds") of *Cannabis indica*.

Wikipedia entry: [Cannabis indica](#).



Wikipedia entry: [Richard Evans Schultes](#) (1915-2001).